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ABSTRACT

In order to be effective, instruction must be more than tailored to the individual: it must be a part of a larger system designed to support individualized learning. An effective individualized instructional environment is a dynamic system; it involves instructors who embrace the concept of individualizing instruction, and provides guidance to students throughout their educational lives, attending to their personal needs. In a Personalized Independent Learning System (PILS), the learning experiences are personalized in two ways: the content chosen reflects an individual's needs, and the learning process reflects an individual's needs. Independence is encouraged in PILS by focusing on producing autonomous, self-regulated learners. Emphasis is placed on developing learners' metacognitive and critical thinking skills and ability to function as experts within their domain. A PILS environment is characterized by learning outcomes rather than the instructional materials involved, and it approaches education systematically. Networked computer technologies such as teleconferencing, the World Wide Web, and e-mail can provide valuable support to PILS. (Contains 17 references.) (AEF)

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Personalized Independent Learning Systems in High Technology Environments

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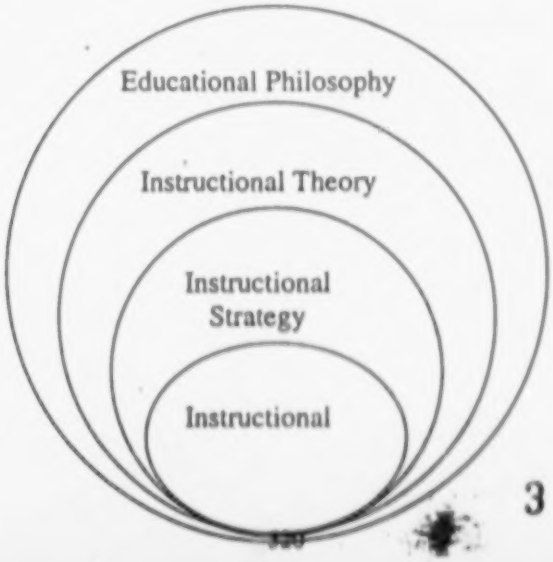
Personalized Independent Learning Systems

The 1970s saw the birth of a new concept in education: individualized instruction. Technologies such as intellectual assessment, programmed instruction, and standardized testing caused educators to rethink traditional, group based instruction and develop a wave of individualized education systems. (Armstrong & Savage 1983, Bangert, 1983, Blackburn, 1976, Dunn & Dunn, 1972, Wilson & Tosti, 1972). However, by the mid 1980's individualized instructional systems lost momentum. Reports such as the Bell Commission described the United States as "a nation at risk" due to its failing educational system, and educational reforms such as American 2000 called not for fundamental changes in the way education is approached, but only for higher educational standards (Seymour & Seymour, 1992). As the 1990s continue, little seems to have improved for American schools and theorists such as Reigeluth argue that American schools can improve only by committing to systemic, systematic restructuring (Reigeluth, 1992).

Instead of offering piecemeal solutions to educational change, educators need to offer solutions that address educational issues systemically and provide an overarching purpose or philosophy of education (Reigeluth, 1992, Postman, 1993; 1995). Although many educational theorists abandoned individualized instruction in the 1970s, *individualizing* instruction still hold promise as a an overarching philosophical approach to education. By integrating educational strategies that are known to be effective, such as reinforcement, individual pacing, providing feedback, mastery learning, and cooperative learning into a unified framework for education, educators might be able to develop functional educational systems that address students' needs (Walberg et. al, 1984). As emerging information technologies make implementing these strategies more feasible than ever before, the time to rethink individualizing instruction has come (Reigeluth, 1992).

Theoretical Framework: Personalized Independent Learning Systems

Bichelmeyer (1997) provides a framework for rethinking individualized instruction. She suggests that educators should think of individualized learning as an overaching philosophy of education with corresponding instructional theories rather than only an instructional strategy.



Therefore, in order to be effective, instruction must be more than tailored to the individual, it must be a part of a larger system designed to support individualized learning. An effective individualized instructional environment is a dynamic system; it involves instructors who embrace the concept of individualizing instruction, it provides students guidance throughout their educational lives, attending to their individual needs. Bichelmeyer has termed this type of environment a "Personalized Independent Learning System" (PILS).

In a Personalized Independent Learning System, the learning experiences are personalized in two ways: the content chosen reflects an individuals' needs, and the learning process reflects an individual's needs. Independence is encouraged in PILS by focusing on producing autonomous, self-regulated learners. Emphasis is placed on developing learners' metacognitive and critical thinking skills and ability to function as experts within their domain, rather than on producing students who can complete a narrow range of instructor derived tasks. In a PILS, learning is more important than instruction; unlike earlier individualized instructional environments, a PILS environment is characterized by learning outcomes rather than the instructional materials involved. Last, a PILS approaches education systemically; individualized instructional approaches typically are confined to particular materials, whereas a PILS is an educational system, designed with supports and mechanisms needed to support personalized learning.

Networked computer technologies such as teleconferencing, the World Wide Web, and email can provide valuable support to PILS. Teleconferencing can allow for groups of learners with similar needs and goals to meet irrespective of location. The World Wide Web is a resource that can provide a wealth of information to learners in the form of online textbooks and tutorials. The web can also support communication and organization within a group of learners, as they post information, and consult course information on line. Last, email can provide students an instructors asynchronous communication. Via email, instructors and students can exchange ideas irrespective to locale and with greater ease and convenience. This research project examines a series of design courses that are an example of a PILS and evaluates how technology is used to support a PILS.

The design model chosen is being used in a series of courses delivered via distance education to high school students and to a group of adult distance educators. The course utilizes the World Wide Web, email, interactive teleconferencing to support individualized learning over a distance. The researchers are using videotapes of the interactive teleconferencing sessions, surveys of students and teachers, and analysis of student reflections in order to evaluate the efficiency, effectiveness, and appeal of these courses and generate recommendations toward the revision of the PILS instructional

design theory. Special attention is also directed at assessing the ill-defined learning outcomes associated with teaching design.

The presentation will discuss the theoretical framework of PILS and explore its ramifications. The presenters will share their findings on the strengths and weaknesses of the design model and give recommendations on how to use technology to support and create PILS.

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